INSTRUCTION MANUAL
MODEL 9610
TIMING TERMINAL UNIT
PART NUMBER 9610-7011

datum inc.

Timing Instrumentation

INSTRUCTION MANUAL
MODEL 9610
TIMING TERMINAL UNIT
PART NUMBER 9610-7011

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SECTION I
DESCRIPTION

The Model 9610-7011 Timing Terminal Unit consists of one (1) each Model 9610-141 chassis and Model 9610-165 Power Supply, six (6) Model 9610-2012 Dual M.F. Distribution Amplifiers and six (6) Model 9610-2013 Dual H.F. Distribution Amplifiers.

The top assembly drawing in Section V shows the locations of these plug-in functional modules, and the input/output connectors. See Wiring Diagram 9610-8140 for input/output connections.

Signal input and output connections are made via BNC connectors mounted on the instrument's rear panel.

GENERAL DESCRIPTION

The Model 9610-141 Chassis is a housing assembly of the DATUM, Inc. Model 9610 Timing Terminal Unit System. The various module mounting needs, power interconnection, and input/output signal connection capability are provided via wiring between the several module connectors provided in the chassis.

Up to 14 single-width modules (or up to 7 double-width modules) or any appropriate combination of widths may be accommodated in a single Model 9610-141 Chassis. Seven module connectors are supplied in the basic configuration.

Signal input/output connections are made via BNC connections mounted on the instrument's rear panel. Twelve (12) input and twenty-four (24) output connections are provided in the basic configuration. Refer to Wiring Diagram (see Top Assembly drawing) for specific input/output configuration.

Primary power is accepted via the three pin connector which mates with the supplied power cord.

The Model 9610-141 Chassis is 3-1/2 inches high, 10 inches deep and 17 inches wide, equipped with mounting ears for installation in a standard 19-inch equipment cabinet.

MODEL 9610-165 POWER SUPPLY
(P/N 18733)

GENERAL DESCRIPTION

The Model 9610-165 Power Supply is a double-width, (H-3.28" X W-2.30"), functional module of the DATUM, Inc. Model 9610-XXX Timing Terminal Unit System that provides power for the other modules in the system.

The Model 9610-165 Power Supply provides the following power outputs:

1. +5 volts at 1 ampere
2. +8 volts at 1 ampere
3. -8 volts at 1 ampere

SPECIFICATIONS

1. Power
   a. Input

      115V ±10%/220V ±10% 50 to 400 Hz, 30 watts

      Line voltage taps of 5% are provided for nominal line voltages of:

      110 volts - connect E2 to E8
      115 volts - connect E2 to E9 } E5 to E7
      120 volts - connect E2 to E10

      210 volts - connect E2 to E8
      220 volts - connect E2 to E9 } E5 to E6
      230 volts - connect E2 to E10

b. Output, Full Load

Voltage	Current
+8 volts 5%	1.0 ampere
-8 volts 5%	1.0 ampere
+5 volts 5%	1.0 ampere

Each regulated voltage is over-current protected.

Pin configuration is as follows:

1.	+5 volts power	A.	+5 volts power
2.	+5 volts return	B.	+5 volts return
3.	+8 volts return	C.	+8 volts return
4.	Not Used	D.	Not Used
5.	+8 volt power	E.	+8 volt power
6.	-8 volt return	F.	-8 volt return
7.	-8 volt power	H.	-8 volt power
8.	AC power neutral	J.	AC power neutral
9.	AC line (high side)	K.	AC line (high side)
10.	AC line (low side)	L.	AC line (low side)

2. Mechanical: Front Panel: H-3.23" X W-2.30"
Connector: 20 pin, edge of card plated
Mounting: Front panel thumbscrews
Depth: 6.8 inches after mounting

M.F. DISTRIBUTION AMPLIFIER

MODEL 9610-2012

Assembly No. 18711

GENERAL DESCRIPTION

The Model 9610-2012 M.F. Distribution Amplifier is a functional module of the DATUM, Inc. Model 9610 Timing Terminal Unit system. Power and input/output connections are provided by the Model 9610-140 series chassis and Model 9610-150 series power supply assemblies which are integral components of the 9610 system.

The Model 9610-2012 M.F. Distribution Amplifier may be installed in any appropriate module connector of the Model 9610-140 series chassis to provide two (2) independent, isolated AC amplifier functions.

The Model 9610-2012 is provided with output loss alerting (alarm buss activation and visual LED indication), along with a means to test and to reset the alarms. In most cases, this feature is disabled at the factory prior to shipping by providing a constant reset (ground) to the alarm circuitry in the chassis wiring. This feature may be enabled by removing the ground from the reset pin and providing an external means of testing and resetting the alarms (Refer to input specifications).

SPECIFICATIONS

1. Power Requirement (Nominal)
   a. Positive supply voltage (+6 to +15 volts) at 10 milliamperes (excluding load)
   b. Negative supply voltage (-6 to -15 volts) at 10 milliamperes (excluding load)
   c. +5 volts at 60 milliamperes

2. Inputs

a.	Typical input signal	IRIG B Time Code
	1) Carrier frequency:	100 kHz
	2) Modulation Rate:	10 KPPS
b.	Input Configuration:	Single-ended
c.	Input Impedance:	>5 kilohms at 1kHz

d. Input Levels: 0.5 to 7 volts, peak-to-peak

e. Frequency Response: ±3dB from 30Hz to 30kHz

f. Alarm Test

Momentary closure to ground.

g. Alarm Reset

A momentary closure to ground will reset the alarm buss and indication. If a fault still exists, the fault indication will reappear upon removal of the closure to ground.

NOTE: The input signal type referenced above is for reference only. Any AC signal meeting the general specifications may be used.

3. Outputs

a. Each output line is fuse-protected against high voltage damage to circuitry.

b. Output level: Adjustable from 0 to approx. 10 volts, peak-to-peak.

c. Source Impedance: Approximately 600 ohms, balanced, line-to-line, transformer-coupled.

d. Alarm Buss: Diode OR'ed, low-active buss

4. Pin Configuration

1.	Input A	A.	Input A (Return)
2.	+5 Volts	B.	+5 Volts
3.	Alarm Test	C.	Not Used
4.	Output A	D.	Output A
5.	Positive Supply Voltage	E.	Positive Supply Voltage
6.	Alarm Reset	F.	Alarm Buss
7.	Input B	H.	Input B (Return)
8.	Power Ground	J.	Power Ground
9.	Negative Supply Voltage	K.	Negative Supply Voltage
10.	Output B	L.	Output B

H.F. DISTRIBUTION AMPLIFIER
MODEL 9610-2013
Assembly No. 18712

GENERAL DESCRIPTION

The Model 9610-2013 H.F. Distribution Amplifier is a functional module of the DATUM, Inc. Model 9610 Timing Terminal Unit system. Power and input/output connections are provided by the Model 9610-140 series chassis and Model 9610-150 series power supply assemblies which are integral components of the 9610 system.

The Model 9610-2013 H.F. Distribution Amplifier may be installed in any appropriate module connector of the Model 9610-140 series chassis to provide two (2) independent, isolated AC amplifier functions.

The Model 9610-2013 is provided with output loss alerting (alarm buss activation and visual LED indication), along with a means to test and to reset the alarms. In most cases, this feature is disabled at the factory prior to shipping by providing a constant reset (ground) to the alarm circuitry in the chassis wiring. This feature may be enabled by removing the ground from the reset pin and providing and external means of testing and resetting the alarms (Refer to input specifications).

SPECIFICAITONS

1. Power Requirement (Nominal)
   a. Positive supply voltage (+6 to +15 volts) at 40 milliamperes (excluding load)
   b. Negative supply voltage (-6 to -15 volts) at 40 milliamperes (excluding load)
   c. +5 volts at 60 milliamperes

2. Inputs

a.	Typical input signal:	IRIG G Time Code
1)	Carrier frequency:	100 kHz
2)	Modulation Rate:	10 KPPS

b. Input Configuration: Single-ended

c. Input Impedance: 5 kilohms to ground

d. Input Levels: 0.5 to 7 volts, peak-to-peak

e. Frequency Response: ±3dB from 30kHz to 300 kHz

f. Alarm Test

Momentary closure to ground

g. Alarm Reset

A momentary closure to ground will reset the alarm buss and indication. If a fault still exists, the fault indication will reappear upon removal of the closure to ground.

NOTE: The input signal type referenced above is for reference only. Any AC signal meeting the general specifications may be used.

3. Outputs

a. Each output line is fuse-protected against high voltage damage to circuitry.

b. Output level: Adjustable from 0 to approx. 10 volts, peak-to-peak.

c. Source impedance: Approximately 50 ohms, balanced, line-to-line, transformer-coupled.

d. Alarm Buss: Open Collector IC OR'ed, low-active buss.

4. Pin Configuration

1.	Input A	A.	Input A (Return)
2.	+5 Volts	B.	+5 Volts
3.	Alarm Test	C.	Not Used
4.	Output A	D.	Output A
5.	Positive Supply Voltage	E.	Positive Supply Voltage
6.	Alarm Reset	F.	Alarm Buss
7.	Input B	H.	Input B (Return)
8.	Power Ground	J.	Power Ground
9.	Negative Supply Voltage	K.	Negative Supply Voltage
10.	Output B	L.	Output B

SECTION II
THEORY OF OPERATION

The theories of operation as enumerated in the Table of Contents can be found on the following pages.

MODEL 9610-165 POWER SUPPLY
(P/N 18733)

THEORY OF OPERATION

The Power Supply consists of three similar bridge rectifiers, filters and regulator circuits providing +8 volts (CRS1, C1-C4, A1 and A2) and +5 volts (CRS2, C5, C6 and A3) power outputs.

Each bridge rectifier output is filtered by capacitors sized for the maximum regulated current output of the respective supply. Each integrated circuit regulator output voltage is determined by the regulator type used. The regualtors are overcurrent and short circuit protected.

The AC power input is fused and bypassed to the power neutral in the Model 9610-140 Chassis. The power switch and indicator lamp are mounted on the front panel of the power supply.

INTERNAL ADJUSTMENTS

There are no Internal Adjustments required.

M.F. DISTRIBUTION AMPLIFIER

MODEL 9610-2012

Assembly No. 18711

THEORY OF OPERATION

The M.F. Distribution Amplifier consists of two identical AC amplifiers on a single circuit card. Each input is routed to an integrated circuit operational amplifier which is transformer-coupled (T1, T2) to the output. An adjustment potentiometer (R1, R10), mounted on the front panel, provides an adjustable overall gain of from 0 to approximately 4 (unloaded).

The amplifier's output is routed to a self-latching level-alarm circuit to provide visual indication of failure and to activate an alarm buss. The alarm circuit is comprised of an adjustable, preset level comparator (1/2 of A1, A4) which converts excursions of the amplifier output to TTL-level pulses. These pulses are used as clocks to an activity sensor comprised of a one-shot multivibrator set to approximately 15 milliseconds (1.5 times the period of the pulse rate of the IRIG A time code). If the peak level of the amplifier output falls below the DC level set by R6 (Channel A) or R15 (Channel B), the activity sensor "times out" and sets an R-S latch comprised of 1/2 of A3 illuminating the associated L.E.D. indicator and activating a diode-OR'ed alarm buss. The R-S latch may be reset by supplying a momentary closure to ground on pin 6 of the circuit card. Each output is fused. Diodes CR1/CR2 and CR8/CR9 protect the amplifier's output by limiting signal excursions to approximately ten volts.

The amplifier's response is ±3dB from 30Hz to 30kHz.

INTERNAL ADJUSTMENTS

Alarm adjustment potentiometers R6 (Channel A), R15 (Channel B) determine the minimum acceptable output signal level. Use an oscilloscope to monitor the DC level at A4, Pin 2 (Channel A) or at A1, Pin 2 (Channel B). Adjust R6 or R15 to set this DC level to a value corresponding to the peak level determined above. When the output falls below this level, the alarm will be activated.

H.F. DISTRIBUTION AMPLIFIER
MODEL 9610-2013
Assembly No. 18712

THEORY OF OPERATION

The H.F. Distribution Amplifier consists of two identical AC amplifiers on a single circuit card. Each input is routed to an integrated circuit operational amplifier which is transformer-coupled (T1, T2) to the output. An adjustment potentiometer (R1, R14), mounted on the front panel, provides an adjustable overall gain of from 0 to approximately 4 (unloaded).

The amplifier's output is routed to a self-latching level-alarm circuit to provide visual indication of failure and to activate an alarm buss. The alarm circuit is comprised of an adjustable preset level comparator (U1, U6) which converts excursions of the amplifier output to TTL-level pulses. These pulses are used as clocks to an activity sensor comprised of a one-shot multivibrator set to approximately 15 milliseconds (1.5 times the period of the pulse rate of the IRIG A time code). If the peak level of the amplifier output falls below the DC level set by R8 (Channel A) or R21 (Channel B), the activity sensor "times out" and sets an R-S latch comprised of 1/2 of U5 and 1/4 of U4, illuminating the associated L.E.D. indicator and activating an open collector IC-OR'ed alarm buss. The R-S latch may be reset by supplying a momentary closure to ground on pin 6 of the circuit card. Each output is fused. The amplifier's response is $\pm$3dB from 30kHz to 300kHz.

INTERNAL ADJUSTMENTS

Alarm adjustments potentiometers R8 (Channel A), R21 (Channel B) determine the minimum acceptable output signal level. Use an oscilloscope to monitor the DC level at U6, pin 4 (Channel A) or at U1, pin 4 (Channel B). Adjust R8 or R21 to set this DC level to a value corresponding to the peak level determined above. When the output falls below this level, the alarm will be activated.

SECTION III
MAINTENANCE AND TROUBLESHOOTING

GENERAL

The Model 9610 Timing Terminal Unit System requires no routine electronic maintenance. The following instructions are intended to be a guide in the event of a system malfunction and to isolate the malfunction to a plug-in module. Adjustments should not be made unless there is an established malfunction attributable to misadjustment. Once the malfunctioning module has been determined, failed components may be found with standard troubleshooting techniques.

MALFUNCTION ISOLATION INSTRUCTIONS

1. Verify that all fuses are good and are seated firmly in their sockets.

2. Verify that all power inputs are within the specifications as defined in Section I.

3. Verify that input signals are within their specified limits as defined in Section I.

4. If under the above conditions the module does not meet its output specifications, the module has malfunctioned.

SECTION IV
RECOMMENDED SPARE PARTS

In order to insure continuous on-line operation with minimum down time for maintenance, it is recommended that spares be maintained at the module level rather than the component level at the using activity site.

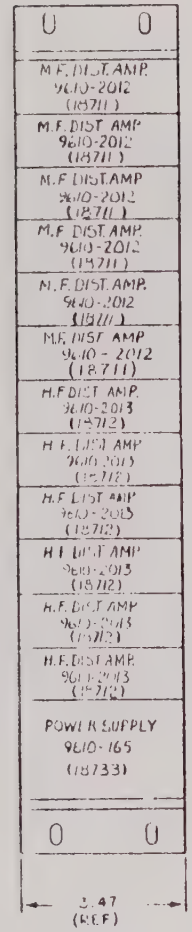
It is recommended that 10% of the modules used or minimum of one (1) module of each type used (whichever is greater) be maintained at the using activity site.

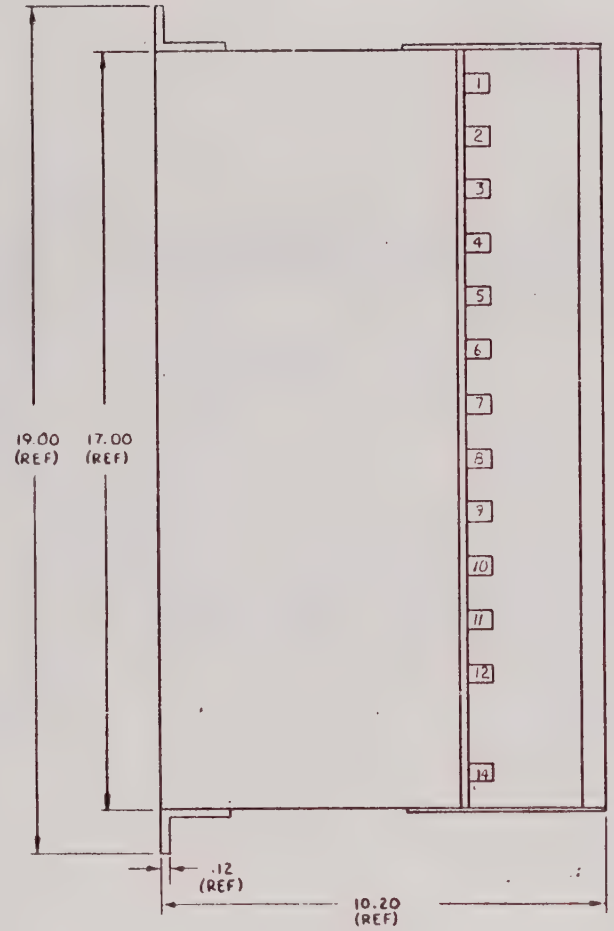
The module types and quantities utilized in the system may be determined from the Top Assembly Drawing in Section V of this instruction manual.

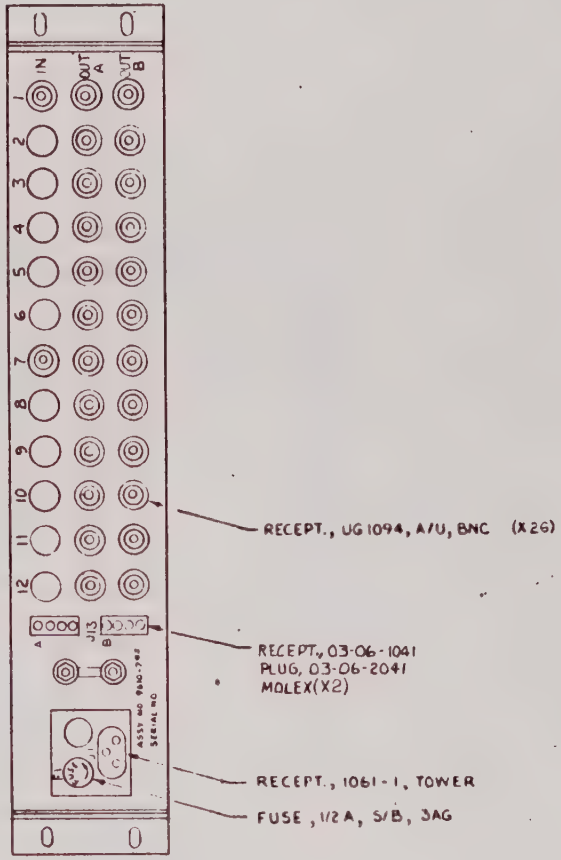
SECTION V
DRAWINGS

The Drawings enumerated in the Table of Contents can be found on the following pages.

REV LTR	DESCRIPTION	DATE	APPROVED







2. II AC POWER INPUT
1. WIRING DIA 9610-8140

NOTES: UNLESS OTHERWISE SPECIFIED

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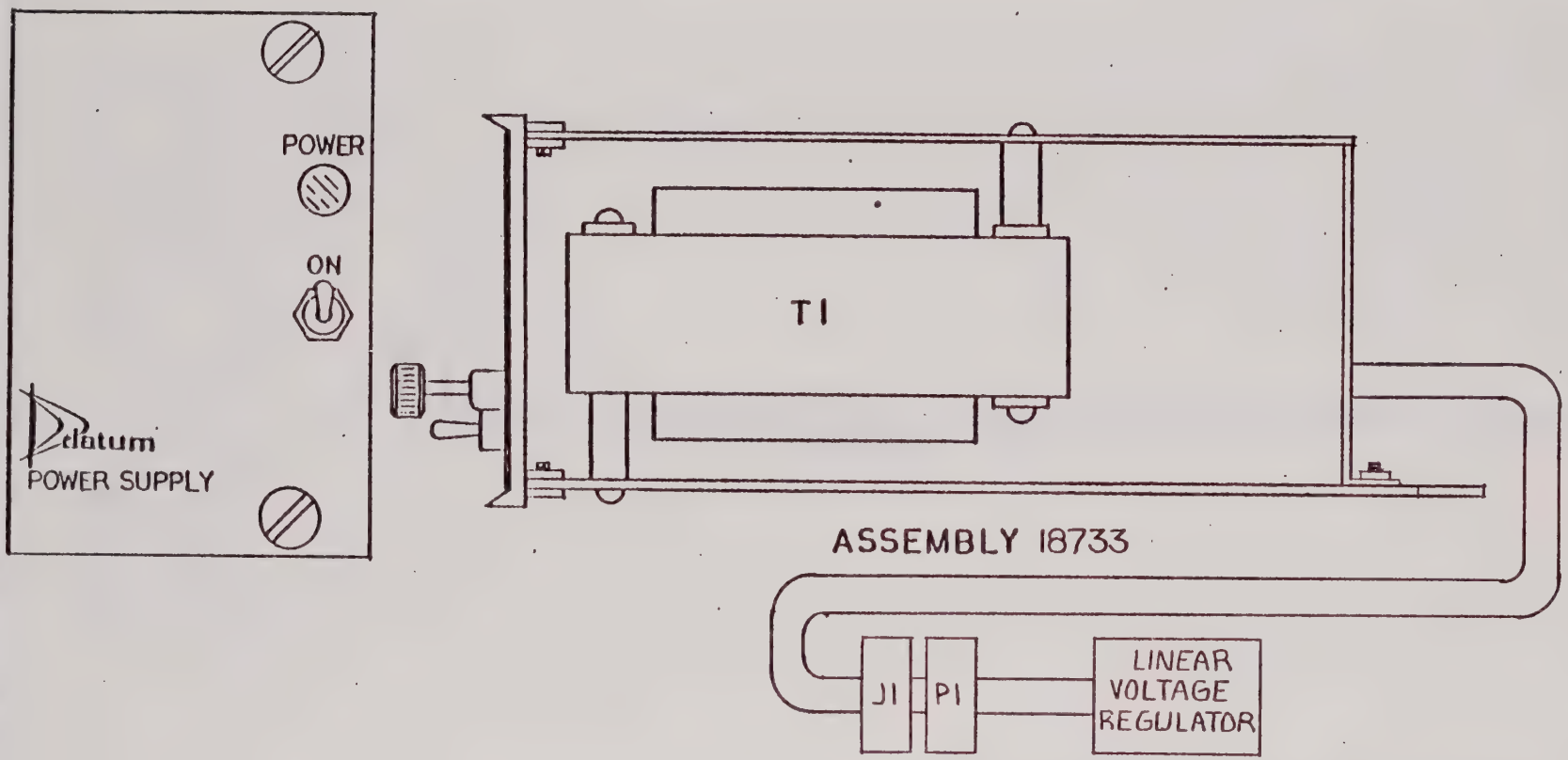
TITLE: TIMING TERMINAL UNIT

Datum inc.
1363 S. STATE COLLEGE BLVD
ANAHEIM CALIFORNIA 92806

DRWN	JON	10/1/85	DES		
CHK	SATINDER	10/1/85	ENGR		11/85
SCALE	NONE		PROJ	31160	

C | 9610-7011 | SHT 1 OF 1 | REV

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOL: .XX ±.03
.XXX ±.010
ANGLES ±1/2°

TITLE: POWER SUPPLY

DWN	TERI	5/3/82	DES		
CHK			ENGR	W	1/83
SCALE	NONE		FSC	31160	

Datum inc.
1363 S. STATE COLLEGE BLVD.
ANAHEIM, CALIFORNIA 92806

SIZE	SHT	OF	REV
A	9610-165		

NOTES: UNLESS OTHERWISE SPECIFIED

REVISIONS			
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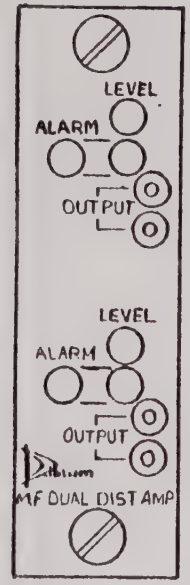

ASSEMBLY 18711

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOL .XX ±.03
.XXX ±.010
ANGLES ± 1/2°

TITLE
DUAL
M.F. DISTRIBUTION
AMPLIFIER

DWN TERI	3/30/82	DES	
CHK		ENGR W	1/83
SCALE NONE		FSC 31160	

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1363 S. STATE COLLEGE BLVD.
ANAHEIM, CALIFORNIA 92806

A	9610-2012	
SIZE	SHT 1 OF 1	REV

REVISIONS			
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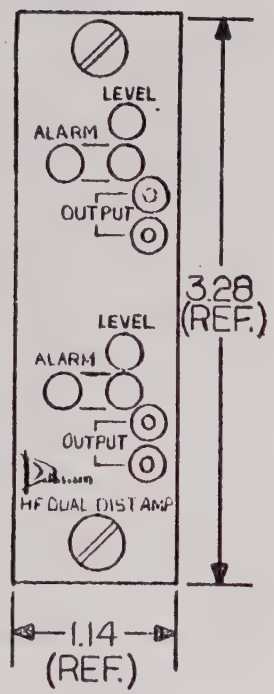

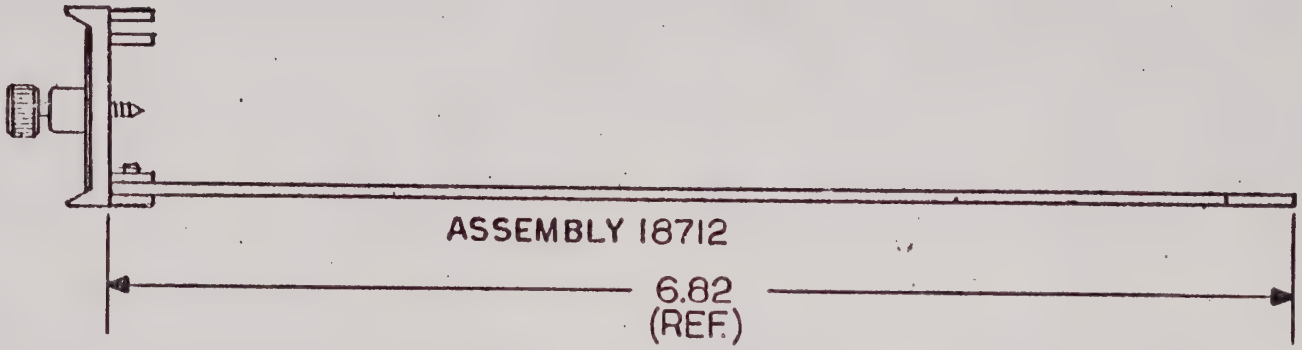

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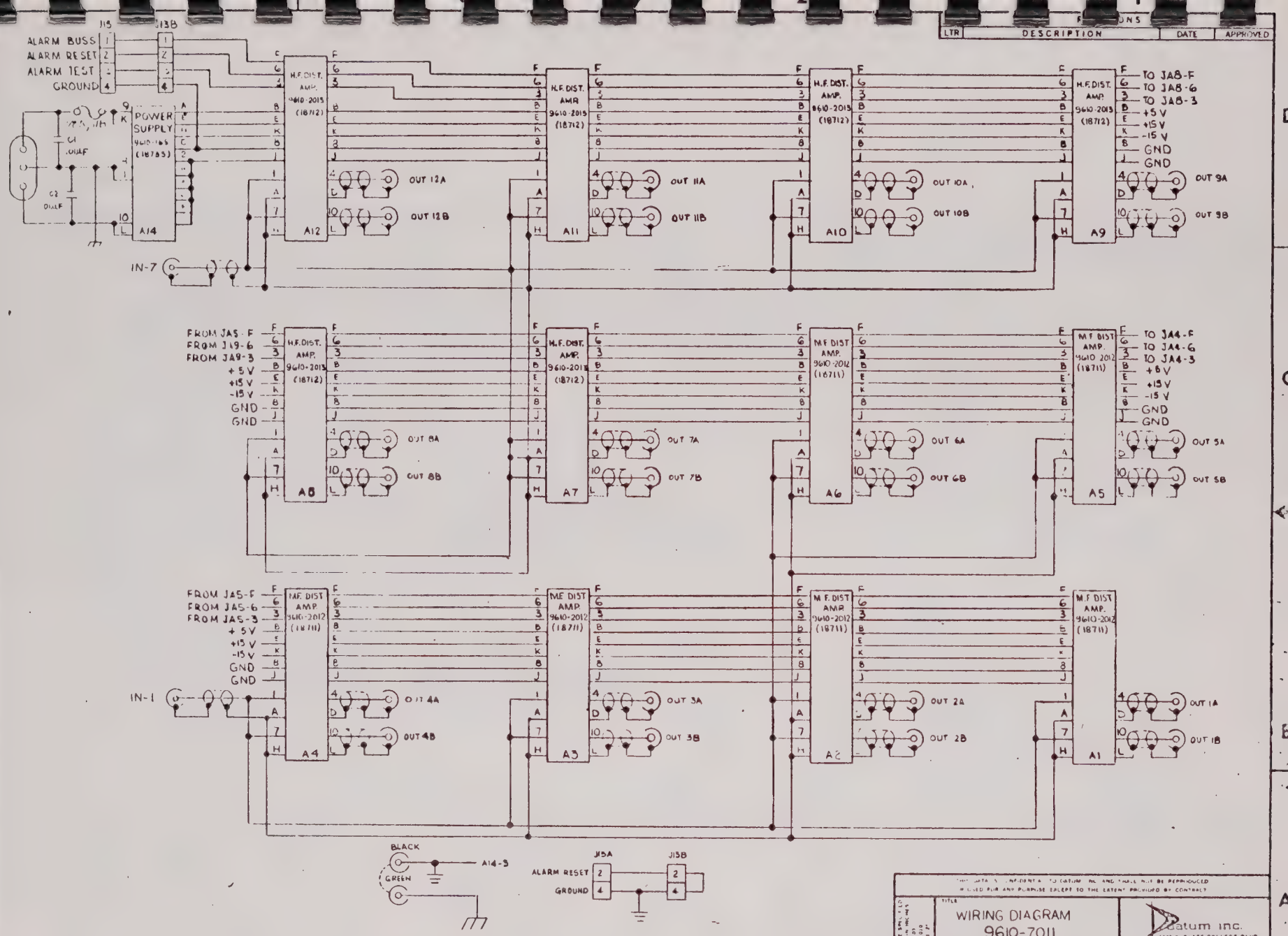
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOL: .XX ±.03 .XXX ±.010 ANGLES ± 1/2°

TITLE
DUAL
H.F. DISTRIBUTION
AMPLIFIER

DWN TERI	3/30/82	DES	
CHK		ENGR W	1/83
SCALE NONE		FSC 31160	

Datum inc.
1363 S. STATE COLLEGE BLVD.
ANAHEIM, CALIFORNIA 92806

SIZE	DWG NO	REV
A	9610-2013	
	SHT 1 OF 1	



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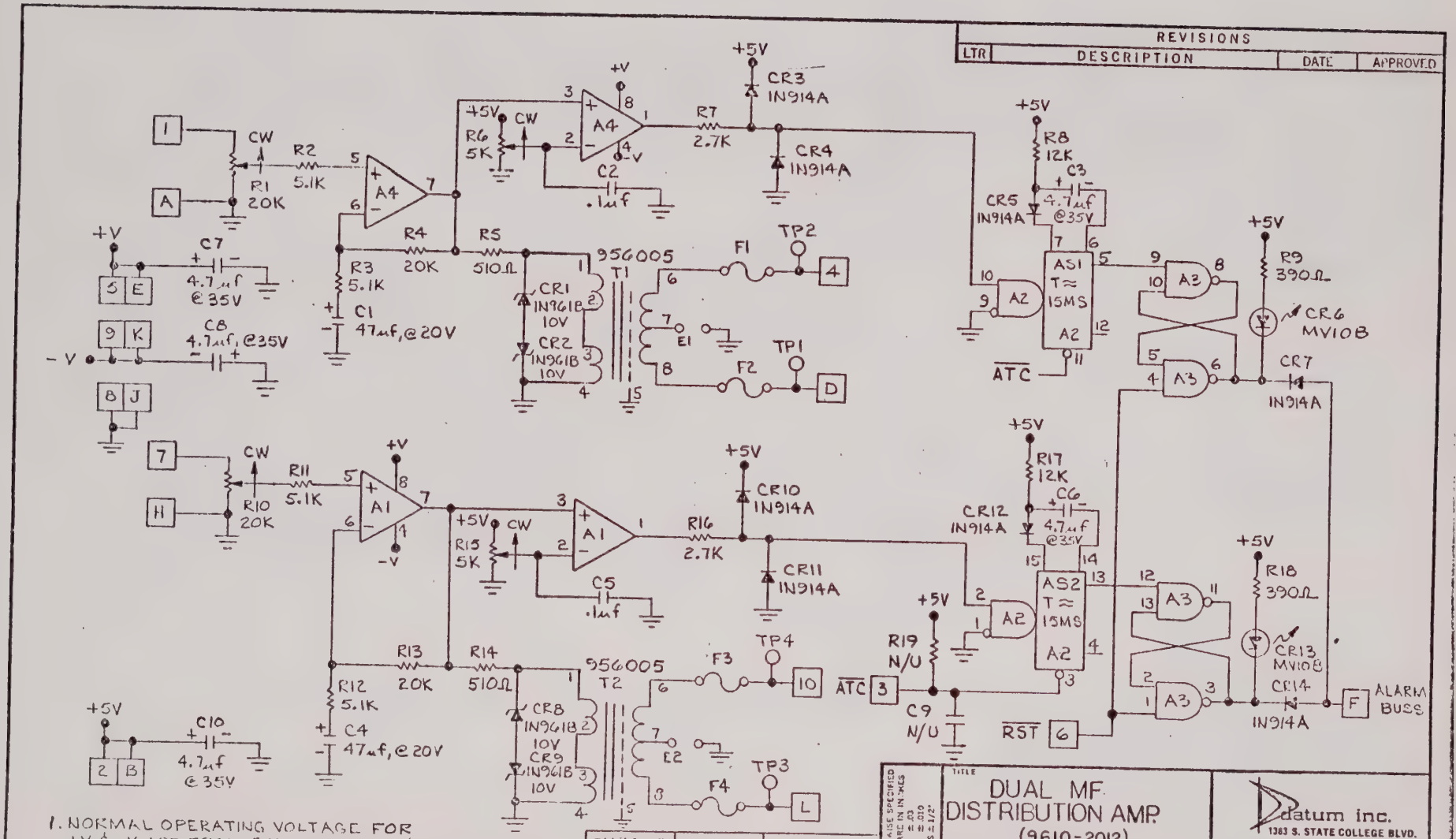


1. NORMAL OPERATING VOLTAGE FOR +V & -V ARE FROM 5 TO 18 VOLTS.

NOTES:

			SN7403	TI	A2
5559 V	SIGNETICS	A1, A4	N7400	NATIONAL	A3
PART NO	MFR	REF NO	PART NO	MFR	REF NO

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOL .XX ± .010 ANGLES ± 1/2°

TITLE
DUAL MF DISTRIBUTION AMP. (9610-2012)

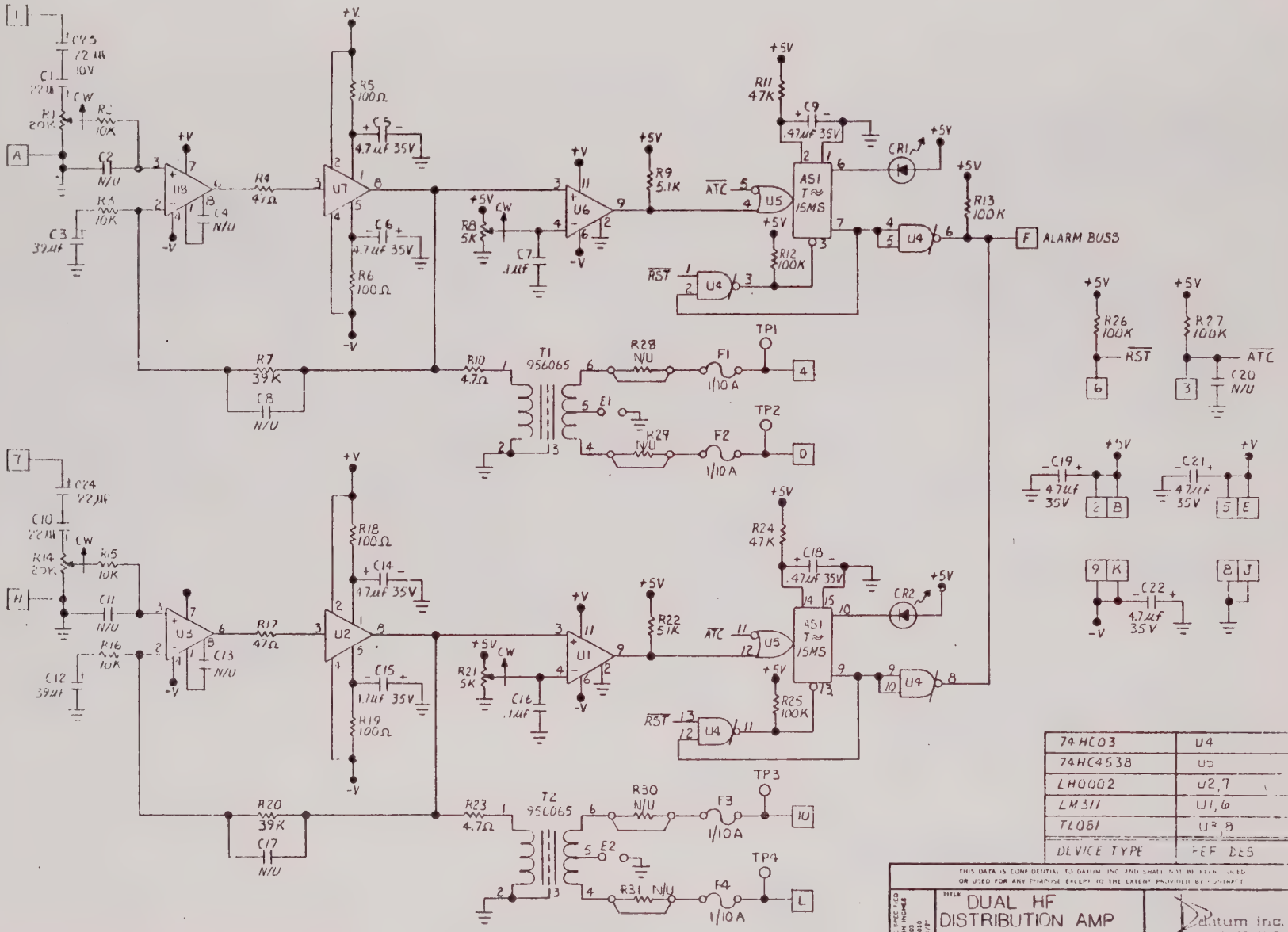
DRAWN LARREY 9/29/81
CHK
ENGR W 1/83
APVD

datum inc.
1363 S. STATE COLLEGE BLVD.
ANAHEIM, CALIFORNIA 92806

B 18711

SCALE SHT OF REV

LTR	DESCRIPTION	DATE	APPD
A	REDRAWN PER ECO T4835	2-3-84	t H
B	ADDED C23 & C24	3-1-84	TL



1. NORMAL OPERATING VOLTAGE FOR +V AND -V ARE FROM 5 TO 8 VOLTS.

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES
.XX = ±.03
.XXX = ±.010
ANGLES = 1/2°

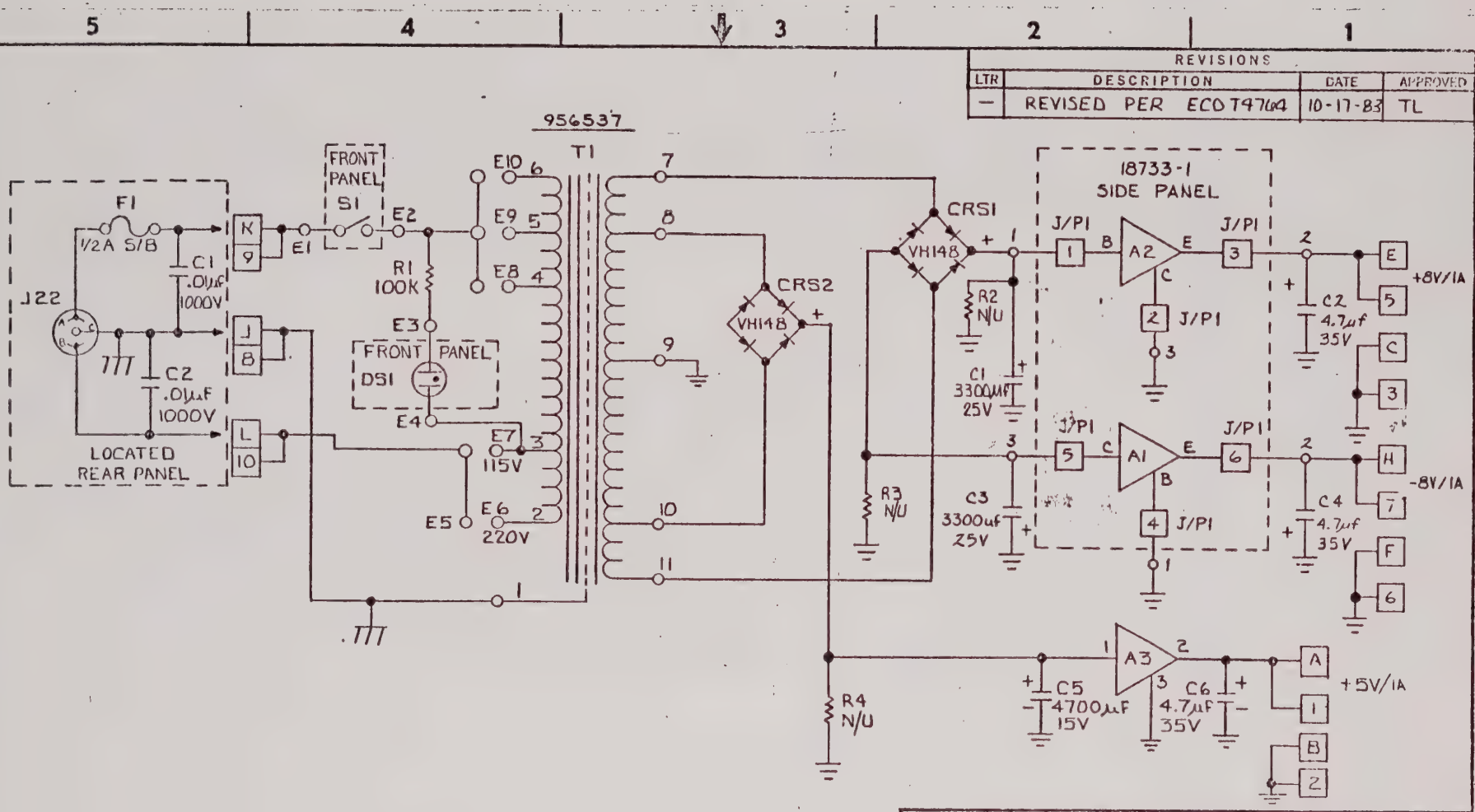
TITLE: DUAL HF DISTRIBUTION AMP (9610-20131)

DWN ESTHER 2/3/84 DES
CHK ENGR
SCALE NONE PSC 31160

Datum inc. 1363 S STATE COLLEGE BLVD ANAHEIM CALIFORNIA 92806

C 18712 B

SIZE SHT 1 OF 1



LTR	DESCRIPTION	DATE	APPROVED
—	REVISED PER ECO T9764	10-17-83	TL

PART NO	MFR.	REF.
MC7908CK	FAIRCHILD	A1
MC7808CK	FAIRCHILD	A2
LM323	NATIONAL	A3

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOL .XX ± .03 .XXX ± .010 ANGLES ± 1/2°

TITLE: POWER SUPPLY (9610-165)

DWN JOHN 11/3/83 DES

CHK ENGR

SCALE NONE FSC 31160

SIZE B 18733 REV

SHT 1 OF 1

Datum inc.
1363 S. STATE COLLEGE BLVD.
ANAHEIM, CALIFORNIA 92806

SECTION VI
MATERIALS LISTS

The materials lists enumerated in the Table of Contents can be found on the following pages.

DATE: 9.27.65

DRAWN: SATINDER

CHK:

PARTS LIST

datum inc.

JOB NO.

QUANTITY

TITLE: TIMING TERMINAL UNIT

ASS'Y NO: 9610 - 7011

REV

SHT 1 OF 1

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
1	9610-140-1	CHASSIS ASSY STK	DATUM	1			
2	" -165	POWER SUPPLY (18733)	"	1			
3	" -2012	MF DIST AMP (18711)	"	6			
4	" -2013	HF " " (18712)	"	6			
5	SK 9610-7011	SHIPPING KIT	"	1			
6							
7	1702-0020	CONNECTOR 20P	"	13			
8	1704-1002	" BNC	"	26			
9	" -1625-4R	" 4P	"	2			
10	1706-1000	BINDING POST	"	1			
11	1792-1855	CONTACT SOCKET	"	8			
12	1795-0001	WASHER	"	26			
13	" -0002	"	"	26			
14	2325-2007	FASTENER	"	2			
15							
16	705879	REAR PANEL	"	1			
17							
18	1706-1001	BINDING POST	"	1			
19							
20	938-L	SHORTING LINK	GENERAL RADIO	1			

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A33971

DRAWN: DLP

MATERIAL LIST

Datum inc.

NO.

QUANTITY

CHK:

TITLE: POWER SUPPLY

ASS'Y NO: 9610-165

SHT / OF /

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.				REF. DES.	UNIT COST	LOT TOTAL	
1	18733	POWER SUPPLY	DATUM	1							

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 5-1-82

DRAWN: GHE

CHK:

MATERIAL LIST

datum inc.

JOB NO:

QUANTITY

REV

TITLE: M.E. DISTRIBUTION AMP

ASS'Y NO: 9610-2012

SHT/ OF/

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.				REF. DES.	UNIT COST	LOT TOTAL	
1	18711	M.E. DIST. AMP	DATUM	1							

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 5-17-82

DRAWN: RJL

CHK:

MATERIAL LIST

datum inc.

JOB NO:

QUANTITY

TITLE: H.E DISTRIBUTION AMP

ASS'Y NO: 9610-2013

SHT 1 OF 1

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
1	18712	H.E DIST AMP	DATUM	1			

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 10-05-81
DRAWN: QHE
CHK:

MATERIAL LIST

datum inc.

JOB NO:
QUANTITY

TITLE: MF DUAL DISTRIBUTION AMP

ASS'Y NO: 18711

SHT / OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
1	0102-0391	RESISTOR 390Ω 1/4W5%	DATUM	2	R9,18		
2	- -0511	- 510Ω - -	-	2	R5,A		
3	- -0272	- 2.7K - -	-	2	R7,16		
4	- -0512	- 5.1K - -	-	4	R2,3,11,12		
5	- -0123	- 12K - -	-	2	R8,17		
6	- -0203	- 20K - -	-	2	R4,13		
7	0153-5001	- POT 5K	-	2	R6,15		
8	- -2002	- - 20K	-	2	R1,10		
9							
10	0212-0104	CAPACITOR .1MF 100V	-	2	C2,5		
11	0220-0475	- 4.7MF 35V	-	5	C3,C-8,10		
12	- -0476-2	- 47MF 20V	-	2	C1,9		
13							
14	0301-5558	IC LM1458N	-	2	** A1,4		
15	- -7123	- SN74123N	-	1	* A2		
16	- -7400	- U7400A	-	1	A3		
17							
18	0500-0306	DIODE 1N914A	-	8	CR3-5,7,10-12,14		
19	0515-0961-2	- 1N961B	-	4	CR1,2,8,9		
20							
21	0601-6005	TRANSFORMER	-	2	T1,2		
22							
23	0703-0010	FUSE 1/10A	-	4	F1-4		
24							
25	1706-1447-1	BUSHING	-	4			
26	1708-3720-1	COMP LEAD SOCKET	-	8	XF1-4		

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 10-08-81
DRAWN: QHE
CHK:

MATERIAL LIST

datum inc.

JOB NO:
QUANTITY

TITLE: MF DUAL DISTRIBUTION AMP

ASS'Y NO: 18711

SHT 2 OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.				REF. DES.	UNIT COST	LOT TOTAL	
27	1706-3002	TEST POINT	DATUM	4				TP1-4			
28	1708-2034	SOCKET 8P	-	2			**				
29	--3100	- 16P	-	1			*				
30	--3100-1	- 14P	-	1							
31											
32	2204-0002	LED	-	2				CR6,13			
33											
34	2325-2007	FASTENER	-	2							
35											
36	171761A	PC BOARD	-	1							
37											
38	704130	FRONT PANEL	-	1							
39	704139	COVER PLATE	-	1							

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 1-21-84

DRAWN: JEFI

CHK:

MATERIAL LIST

datum inc.

JOB NO:

QUANTITY

B

TITLE: HF DUAL DISTRIBUTION AMPLIFIER

ASS'Y NO: 18712

SHT 1 OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
1	0102-0470	RESISTOR 47Ω, ¼W, 5%	DATUM	2	R4,17		
2	" -04R7	" 4.7Ω " "	"	2	R10,23		
3	" -0101	" 100Ω " "	"	4	R5,6,18,19		
4	" -0512	" 5.1K " "	"	2	R9,22		
5	" -0103	" 10K " "	"	4	R2,3,15,16		
6	" -0473	" 47K " "	"	2	R11,24		
7	" -0104	" 100K " "	"	5	R12,13,25,26,27		
8	" -0393	" 39K " "	"	2	R7,20		
9	0153-5001	RESISTOR POT 5K	"	2	R8,21		
10	0153-2002	" " 20K	"	2	R1,14		
11							
12	0220-0474	CAPACITOR .47μf 35V	"	2	C9,18		
13	" -0475	" 4.7μf 35V	"	7	C5,6,14,15,19,21,22		
14	" -0396	" 39μf 10V	"	2	C3,12		
15	0226-0104-2	" .1μf 25V	"	2	C7,16		
16	0220-0226	" 22μf 10V	"	4	C1,10,23,24		
17							
18	0301-HC03	IC 74HC03	"	1	U4		
19	" -HC45-38	" 74HC4538	"	1	U5		
20	" -NH02	" LH0002CN	"	2	U2,7		
21	" -9311	" LM311N	"	2	U1,6		
22							
23	2204-3600	LED RED	"	2	CR1,2		
24	9560065	TRANSFORMER	"	2	T1,2		
25	TL081CP	IC	TI	2	U3,8		
26							

NOTES: JUMPER ACROSS R28-R31

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A19506

DRAWN: TSR

CHK:

MATERIAL LIST

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QUANTITY

B

TITLE: HF DUAL DISTRIBUTION AMPLIFIER

ASS'Y NO: 18712

SHT 2 OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
27	0703-0010	FUSE 1/10 A	DATUM	4	F1-F4		
28							
29	1706-1447-1	BUSHING WHT	"	4			
30	" -3002	TEST POINT RED	"	4	TP1-TP4		
31	1708-3270-1	SOCKET, COMP LEAD	"	8			
32							
33	2325-2007	FASTENER	"	2			
34							
35	708936	PANEL	"	1			
36	708935	COVER PLATE	"	1			
37							
38	171887 A	PC. BOARD	"	1			

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A19500

DATE: 10-08-81
DRAWN: GAE
CHK:

MATERIAL LIST

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JOB NO:
QUANTITY
TITLE: POWER SUPPLY
ASS'Y NO: 18733
SHT 1 OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
1	0102-0104	RESISTOR 100K 1/4W 5%	DATUM	1	R1		
2							
3	0219-0478	CAPACITOR 4700MF 16V	-	1	C5		
4	0220-0475	4.7MF 35V	-	3	C2,4,6		
5							
6							
7							
8	0301-9323-K	- LM323K	-	1	A3		
9							
10	0540-0148	BRIDGE RECT VH148	-	2	CR5,6		
11							
12	1202-0102	SWITCH SPDT	-	1			
13	1704-1625-6R	CONNECTOR 6P	-	1			
14	1708-4602	SOCKET	-	1			
15	1792-1561	CONTACT SOCKET	-	6			
16	2107-0001	LAMP	-	1			
17	2310-4003	STANDOFF 4-40x 7/16	-	2			
18	- -4004	- - x 1/2	-	2			
19	2325-2007	FASTENER	-	2			
20	18733-1	PWR SUPPLY (REGULATOR)	-	1			
21	1713224	PC BOARD	-	1			
22							
23	703098	FRONT PANEL STK	-	1			
24	703099	COVER PLATE STK	-	1			
25	705272	PLATE	-	1			
26							

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

DATE: 10-08-81
DRAWN: RH
CHK:

MATERIAL LIST

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JOB NO:
QUANTITY
TITLE: POWER SUPPLY
ASS'Y NO: 18733
SHT 2 OF 2

ITEM	STOCK/PART NO.	DESCRIPTION	MFR/SPEC	QTY.	REF. DES.	UNIT COST	LOT TOTAL
27	956537	TRANSFORMER	DATUM	1	T1		
28							
29	338RMR025M	CAPACITOR 3300MF 25V	ILL CAP	2	C1,3		
30							
31	LAT03B4CB	HEAT SINK	IERC	1			

NOTES:

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-7967

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